1. A method for making a metal-insulator-metal capacitor on a substrate comprising the steps of:

forming bottom electrodes from a first conducting layer on said substrate;

depositing a first wide-band-gap insulating layer on said bottom electrodes;

depositing a high-k dielectric film over said wide-band-gap insulating layer;

depositing a second wide-band-gap insulating layer over said high-k dielectric film;

forming top electrodes from a second conducting layer on said second wide-band-gap insulating layer.

2. The method of claim 1, wherein said bottom electrodes and said top electrodes are formed from a material selected from the group that includes titanium nitride, tantalum nitride, tungsten nitride, ruthenium, iridium, iridium oxide, and platinum, and is deposited to a thickness of between about 200 and 1000 Angstroms.

3. The method of claim 1, wherein said first and said second wide-band-gap insulating layers are materials selected from the group that includes silicon dioxide and aluminum oxide.

4. The method of claim 1, wherein said high-k dielectric film is a material selected from the group that includes tantalum pentoxide, silicon nitride, titanium oxide, zirconium oxide, and hafnium oxide.

5. The method of claim 4, wherein said high-k dielectric film is deposited by physical vapor deposition.

6. The method of claim 4, wherein said high-k dielectric film is deposited by chemical vapor deposition.

7. The method of claim 4, wherein said high-k dielectric film is deposited by atomic layer chemical vapor deposition.

8. The method of claim 4, wherein said high-k dielectric film is deposited to a thickness of between about 50 and 800 Angstroms.

9. The method of claim 4, wherein said high-k dielectric film is treated in a gas selected from the group that includes oxygen, nitrogen, nitrous oxide,

and ammonia, and rapid thermally annealed at a temperature of between about 300 and 700°C for a time of between about 1 and 260 seconds.

10. A method for making a metal-insulator-metal capacitor on a substrate comprising the steps of:

forming bottom electrodes composed of titanium nitride on said substrate;

depositing a first wide-band-gap insulating layer composed of aluminum oxide over said bottom electrodes;

depositing a high-k dielectric film composed of tantalum pentoxide over said wide-band-gap insulating layer;

depositing a second wide-band-gap insulating layer composed of aluminum oxide over said high-k dielectric film;

forming top electrodes composed of titanium nitride over said second wide-band-gap insulating layer.

11. The method of claim 10, wherein said bottom electrodes and said top electrodes composed of titanium nitride have a thickness of between about 200 and 1000 Angstroms.

12. The method of claim 10, wherein said first and said second wide-band-gap insulating layers composed of

aluminum oxide have a thickness of between about 10 and 50 Angstroms.

13. The method of claim 10, wherein said high-k dielectric film composed of tantalum pentoxide has a thickness of between about 50 and 800 Angstroms.

14. The method of claim 10, wherein said tantalum pentoxide is deposited by chemical vapor deposition.

15. The method of claim 10, wherein said tantalum pentoxide is treated in a gas selected from the group that includes oxygen, nitrogen, nitrous oxide, and ammonia, and is rapid thermally annealed at a temperature of between about 300 and 700^{o}C for a time of between 1 and 260 seconds.

16. A method for making a metal-insulator-metal capacitor on a substrate comprising the steps of:

forming bottom electrodes on said substrate;

depositing a first wide-band-gap insulating layer over said bottom electrodes;

depositing a multilayer of high-k dielectric films over said wide-band-gap insulating layer;

depositing a second wide-band-gap insulating layer over said multilayer;

forming top electrodes over said second wide-band-gap insulating layer.

17. The method of claim 16, wherein said bottom electrodes and said top electrodes are formed from a material selected from the group that includes titanium nitride, tantalum nitride, tungsten nitride, ruthenium, iridium, iridium oxide, and platinum.

18. The method of claim 17, wherein said material is deposited to a thickness of between about 200 and 1000 Angstroms.

19. The method of claim 17, wherein said multilayer of high-k dielectric films is composed of materials selected from the group that includes tantalum pentoxide, silicon nitride, titanium oxide, zirconium oxide and hafnium oxide.

20. The method of claim 17, wherein each layer of said multilayer of high-k dielectric films is treated in a gas selected from the group that includes oxygen, nitrogen, nitrous oxide, and ammonia, and rapid thermally annealed at a temperature of between about 300 and 700^{o}C for a time of between about 1 and 260 seconds.